

RF Exposure Evaluation

FCC ID: 2A4IC-CP80

1. Client Information

Applicant	:	SHENZHEN ZHENYI INTELLIGENT TECH CO., LTD
Address	:	701 Building A, Haohe Zhichuang, No.,10, Fuyuan, 2nd road Zhancheng Community, Fuhai Street, BaoAn District, Shenzhen, Guangdong, China
Manufacturer	:	SHENZHEN ZHENYI INTELLIGENT TECH CO., LTD
Address	:	701 Building A, Haohe Zhichuang, No.,10, Fuyuan, 2nd road Zhancheng Community, Fuhai Street, BaoAn District, Shenzhen, Guangdong, China

2. General Description of EUT

EUT Name	:	Tablet
Model(s) No.	:	CP80, CP80S, CP80K, CP81, CP81K, Q2, Q2S, Q2K
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is that model name.
Product Description	:	RF Output Power: BT: 2.842dBm 802.11b: 2.123dBm 802.11g: 2.034dBm 802.11n (HT20): 2.019dBm 802.11n (HT40): 1.868dBm
	:	Antenna Gain: 1.64dBi PIFA Antenna
Power Supply	:	For adapter: Input: AC 100V-240V Output: DC 5V, 2A DC 3.8V by 4300mAh Rechargeable Li-ion battery
Software Version	:	CP80_20220805
Hardware Version	:	R862T-RK3326S-V1.0
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.		

Note: More test information about the EUT please refer the RF Test Report.

TB-RF-074-1.0

The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Calculation:

Test separation: 5mm					
Bluetooth (GFSK)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mW)	Limit P _{th} (mW)
2.402	2.842	3±1	4	2.512	3
2.441	2.213	2±1	3	1.995	3
2.480	1.386	1±1	2	1.585	3
Bluetooth (π/4-DQPSK)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mW)	Limit P _{th} (mW)
2.402	2.039	2±1	3	1.995	3
2.441	1.425	1±1	2	1.585	3
2.480	2.618	3±1	4	2.512	3
Bluetooth (8-DPSK)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mW)	Limit P _{th} (mW)
2.402	2.554	3±1	4	2.512	3
2.441	1.932	2±1	3	1.995	3
2.480	1.108	1±1	2	1.585	3

802.11b					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Limit P _{th} (mW)
2.412	1.859	2±1	3	1.995	3
2.437	1.757	2±1	3	1.995	3
2.462	2.123	2±1	3	1.995	3
802.11g					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Limit P _{th} (mW)
2.412	1.939	2±1	3	1.995	3
2.437	1.745	2±1	3	1.995	3
2.462	2.034	2±1	3	1.995	3
802.11n(HT20)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Limit P _{th} (mW)
2.412	1.952	2±1	3	1.995	3
2.437	1.845	2±1	3	1.995	3
2.462	2.019	2±1	3	1.995	3
802.11n(HT40)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Limit P _{th} (mW)
2.422	1.738	2±1	3	1.995	3
2.437	1.735	2±1	3	1.995	3
2.452	1.868	2±1	3	1.995	3
The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D04, No SAR is required.					

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06, No SAR is required.

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